

INDEX.

Page.	Page.		
Aération of Sturgeon Eggs in hatching.....	337	Boats employed in Irish Mackerel Fisheries	360
Air circulation for Salt-water Aquaria.....	161	Boiler Incrustations, effect of Sodium Alginat on..	375
Alewife Fishery of United States.....	408	Bonito Fishery of Japan	425, 426
Algæ, utilization of, in Japan.....	434	Bordine, N., Statistical Review of Fish-Culture in	
Algo Cellulose.....	375	Europe and North America.....	193-196
Algin (a new Gelatinous Substance).....	373-375	Brackett, E. A., Letter of invitation to State Fish	
Allen, T. F.....	135	Commissioners	7
American Fish-Culture, Oscar Nordqvist on.....	197-200	Breeding natural Food artificially for young Fish	
American Fisheries, Maintenance and Improvement of, H. M. Smith on.....	287-292	artificially hatched, A. Nelson Cheney on.....	277-279
Anchovies of Puget Sound.....	378-380	Brill, development of.....	254
Apparatus for regulating Temperature of Water in Aquarium.....	160	British Guiana, Fish and Fishing in	237-240
Apparatus of United States Fisheries, Catch by different Forms of.....	409-411	<i>Bromius broomei</i> (torsk), eggs and larvae of.....	250-252
Apparatus, Vessels, and Capital of United States Fisheries.....	394-398	Brooks, W. K., on Origin of Food of Marine Animals.	87-92
Aquarium of U. S. Fish Commission at Columbian Exposition.....	143-190	Cameo Work	452
Aquarium, report of Director Forbes.....	143-158	Canada, the Fisheries of.....	341-348
Armistead, J. J., on Atmospheric and other Influences on the Migration of Fishes.....	93-99	Capital, Apparatus, and Vessels of United States Fisheries.....	394-398
<i>Arnoglossus megastoma</i> (the Sail Fluke), Development of.....	252, 253	Carp and Goldfish of Japan	428
Astrakhan, Plague at.....	314	Carrier Pigeon and Telegraphic Service for Sea Fisheries.....	308
Atkins, Charles G.....	278	Catch by different Forms of Apparatus in United States Fisheries.....	409-411
Atkins, C. G., on rearing Young Salmonoid Fishes..	221-228	Caviar, coarse.....	329
Atmospheric and other Influences on the Migration of Fishes.....	93-99	Chemical Preservatives	300
Augur, C. H., on Fish Nets.....	381-388	Cheney, A. Nelson, on breeding natural Food artificially, for young Fish artificially hatched	277-279
Autumn Mackerel Fisheries of Ireland.....	358, 359	Cholera and Fish.....	312-314
Awabi Fishery of Japan.....	496	Church, Daniel T., on Sea and Coast Fisheries.....	37, 38
Ayu (<i>Plecoglossus altivelis</i>) Fishery of Japan	420, 430	Clam Fishery of United States.....	407
Bacterial Infection of Fish.....	327, 328	Clark, Frank N., on Whitefish Culture.....	218-220
Baird, Spencer F., on increase of Scup	40	Clinton, G. P., Observations and Experiments on <i>Saprolegnia</i> infesting Fish	163-172
Bartlett, S. P.....	148	Close season in Ohio.....	353
Bean, Tarleton H., report as Secretary of World's Fisheries Congress	1-14	Cod fishery of Canada	343-345
Bean, Tarleton H.....	154	Cod fishery of Japan.....	427, 436
Bibliography of <i>Holophrya (Ichthyophthirius) multifilis</i>	175	Commission on Sea and Shore Fisheries recommended	38
Billingsgate Fish Markets	297, 300, 304, 312,	Comparative Statistics of Catch of certain Products in 1880 and 1892	416
	320, 328, 331, 332, 333	Condemned Fish	380, 381
Biological Research in relation to the Fisheries, John A. Ryder on	59-63	Cost of rearing young Salmonoid Fishes	228
Birge, E. A.....	130, 135	Counting small Fish in Hatcheries	227
Bites and Wounds caused by handling Fish.....	319	Crab Fishery of United States	406
Black Bass fry, Size and Appearance of	230	Craig Brook Station, methods employed in rearing young Salmonoid Fishes	221-228
Black Bass fry, transferring and planting.....	233	Crustacean Fisheries of Japan	433, 434
Black Bass, propagating in Ponds, W. F. Page on ..	229-236	Dams, effects of	23
Black Bass, Spawning period of	230	Dannevig, G. M.....	257
Blackford, E. G., remarks as chairman of Fish-cultural Section of Fisheries Congress.....	191	Dean, Bashford, on recent Experiments in Sturgeon hatching on the Delaware River	385-389
Blanchard, R.....	135	Decrease of Food-Fishes in American Waters	21-35
Bluefish, decrease of	27	Deep-water Oyster-culture, H. C. Rowe on	273-276
Bluefish Fishery of United States	408, 409	Delaware River, Sturgeon-hatching Experiments on	335-339
		Depth Migrations of Pelagic Animals, Influence of light on	65-68
		Distributing tank for Aquarium	159

Page.	Page.		
Dolphin and Whale Fisheries of Japan	419-438	Fungus on Fish Eggs	338
Domestic animals poisoned by bad Fish	318	Furniture inlaid with Mother-of-Pearl	451
Dry-air Refrigeration for Fish	291, 301, 302, 303	Fur Seal, Past and Future of, by J. Stanley-Brown	361-370
Duff, H. W., on Decrease of Fisheries	43	Fur Seal, Southern	361
Dunbar, Scotland, Marine Hatchery at	257-262	Fyke or Hoop Nets	24
Dutch Fisheries	37, 42	<i>Gadus minutus</i> , peculiar example of	246, 247
Eisen, G	135	<i>Gadus minutus</i> (the poor cod), Eggs and Larvae of	245, 246
Electric Eels	239	<i>Gadus virens</i> (codfish), Eggs of	247, 248
Enforcement of Fishery Laws	33-35	Geisendorf, Ferdinand	350
Evermann, Barton W., on Investigation of Rivers and Lakes with reference to Fish Environment	69-73	Gill-net Fishing in Lake Erie	350, 352
Explosives, use of	25	Georgia, Oyster Industry of	263-272
Feeding Fry	199	Giant Kelp, economic Value of	371-376
Filters for salt water	100	Gilbert, W. L., on Trout Culture	47, 48
Fish and Special Diseases	315	Glutted Markets	333
Fish-Baskets	24, 34	Goldfish and Carp of Japan	428
Fish Commission; U. S., policy of	62	Goode, George Brown, on Relation of Scientific Re- search to Economic Problems	49-58
Fish-cultural Investigations at St. Andrew's Marine Laboratory, Scotland	241-256	Government Fish Inspection	293
Fish-culture	55-56	Great Britain and Ireland, Reforms and Improve- ments suggested for Fisheries	293-310
Fish-culture in Europe and North America, Statisti- cal Review of	193-196	Great Lakes, Assimilation of Fishery Laws of	17-20
Fish-culture in Michigan	201-211	Great Lakes, Products of Fisheries of	402
Fishermen of Japan	437	Green, Rev. W. S., on Irish Mackerel Fisheries	357-360
Fisheries, Biological Research in relation to	59-63	Green, Seth	214
Fisheries Intelligence Service of Canada	309	Griggs, T. J	148
Fisheries of Canada	341-348	Gulf States, Products of Fisheries of	401
Fisheries of Great Britain and Ireland, Reforms and Improvements suggested	293-310	Halibut, Remarks on Eggs and Young of	248-250
Fisheries of Japan	419-438	Harron, L. G	147, 154
Fisheries of United States in 1880 and 1892	413, 414	Harvesting Black Bass Fry	235, 236
Fisheries of United States, tabular Statement of	408	Hatching (the) of Marine Fishes in relation to the Fisheries	244, 245
Fisheries of United States, Statistics of	389-417	Herrick, Francis H., on the Habits and Develop- ment of the Lobster and their Bearing upon its Artificial Propagation	75-86
Fisheries of Virginia Coast	355, 356	Herring Fishery of Canada	345, 346
Fishes developed at St. Andrew's Marine Laboratory	241-244	Herring Fishery of Japan	432
Fishery Laws, Enforcement of	33-35	Herrings, Smelt, and Sardines, methods of securing	376, 377
Fishery Laws of Great Lakes, Assimilation of	17-20	Ice, use of, in Fishing Operations	291, 300
Fishery School	57	<i>Ichthyophthirius multifiliis</i> , infesting Fish in the Aquarium	173-190
Fish Fungus (<i>Achlyta</i>)	338	Illinois, Restrictive Fishery Regulations of	18
Fish Hatcheries of Pennsylvania, statistics of	22	Infection of Fish by impure Preservatives	326, 327
Fishing Industry, importance of	392	Influence of Light on Migrations of Pelagic Animals, J. Loeb on	65-68
Fishing Methods at Port Townsend, Washington	376, 377	International Fishing conferences	20
Fishing Population of United States	392-394	Investigation of Rivers and Lakes with reference to Fish Environment, B. W. Evermann on	69-73
Fish Inspection by Government	293	Irish Fisheries, demand for development of	310
Fish Nets, C. H. Augur on	381-388	Irish Mackerel Fisheries	357-360
Fish Oil	60	Ito, K., on Fisheries of Northern Japan	435-438
Fish Parasites, Observations concerning, by Edwin Linton	101-112	Jacobi, Stephen Ludwig	213
Fish Protection, Essentials to successful	35	Japan, Fisheries of	419-438
Fish-Protective Associations	34	Jennings, H. S	130
Fish Spoiling through Carelessness, Filth, etc	299	Jewell Filter Company of Chicago	146
Flounder and Sole Fisheries of Japan	427, 428	Johnson, L. N	135
Food-Fishes in American Waters, Decrease of	21-35	Joncas, L. Z., on the Fisheries of Canada	341-348
Food-Fishes, Report of English Commissioners on	37, 42	Jones, Alexander	154
Food for Aquarium Fish	153	Kelp, Giant, economic Value of	371-376
Food for young fish	277-279	Keyes, C. M., on the Fishing Industry of Lake Erie	349-353
Food of Marine Animals, origin of, W. K. Brooks on	87-92	Kombu (Algae) Fishery of Japan	437
Food of the Menhadon, James I. Peck on	113-126	Koshering	333
Forbes, S. A., report on the U. S. Fish Commission Aquarium at Columbian Exposition	143-158	Kunz, G. F., on Pearls and the Utilization and Ap- plication of their Shells in the Ornamental Arts, as shown at the Columbian Exposition	439-457
Foul Fish and Filth Fevers	311-334	Lacquer Wares ornamented with Inlaid Work	450
Foul Fishing Boats and Fish Boxes	322-324	Lake Erie, Fishing Industry of	349-353
Fresh-water Fisheries of Canada	347, 348	Lake Study, outline for	71, 72
Fresh-water Pearls and Pearl Shells of the United States	455, 456		
Fulton, T. Wemyss, on Marine Hatchery at Dunbar, Scotland	257-262		

Page.	Page.
Lawrence-Hamilton, J., on Foul Fish and Filth Fevers	311-334
Lawrence-Hamilton, J., on Reforms and Improvements in the Fisheries of Great Britain and Ireland	293-310
Legislation, Effect on the Fisheries	44, 45
Linton, Edwin, on Fish Parasites	101-112
List of topics for consideration of State Fish Commissioners	8
List of members of World's Fisheries Congress	13, 14
Lobster Fishery of Canada	347
Lobster Fishery of United States	406
Lobster, food of	76
Lobster, Habits and Development of, F. H. Herriek on	75-86
Lobster (<i>Homarus americanus</i>), range of	76
Lobster, length of yearling	83
Lobster, number of Eggs	79, 80
Lobster, molting	77, 78
Lobster, time of feeding	77
Lobster, What we know of the, by Fred. Mather	281-286
Loeb, Jacques, on Influence of Light on Migrations of Pelagic Animals	65-68
Lydell, Dwight	180
MacCallum, G. A., on Assimilation of Fishery Laws of the Great Lakes	17-20
Mackerel Fishery of Canada	346
Mackerel Fishery of Japan	422, 423
Maggots used in feeding Young Fish	233-225
Marine Biological Laboratory	62
Marine Hatchery at Dunbar, Scotland	257-262
Marks, Jesse	130
Mather, Fred., on What we know of the Lobster	281-286
Marsh, C. D.	135
McDonald, Marshall, Address as General Chairman of World's Fisheries Congress	15-16
McDonald, Marshall, Letter as Chairman of General Committee	6-7
McIntosh, W. C., on Fish-cultural Investigations at St. Andrew's Marine Laboratory	241-256
Members proposed for Advisory Council of Fisher- ies Congress	5-6
Menhaden	43
Menhaden, Decrease of	27-30
Menhaden, Food of	113-126
Michigan, Fish-Culture in	201-211
Michigan Waters, Fish planted in	211
Michigan, Restrictive Fishery regulations of	18
Middle Atlantic States, Products of Fisheries of	400
Migration of Fishes, Atmospheric and other Influ- ences upon, by J. J. Armistead	93-99
Miller, S. B., letter of	38
Milner, J. W.	214
Minnesota, Restrictive Fishery Regulations of	18
Mora, J. B.	147
Mosquito Larva used in feeding Young Fish	226
Moorehead, Warren K.	441, 443
Mother-of-Pearl Work	451
Net for taking Plankton	137
Nets for handling Black Bass fry	233
New England States, Products of Fisheries of	399
New York, Restrictive Fishery Regulations of	18
Nordqvist, Oscar, on American Fish-Culture	197-200
Northern Japan, Fisheries of	435-438
Nursery for Black Bass fry	234, 235
Observations concerning Fish Parasites, by Edwin Linton	101-112
Ocean Fishes and Effect of Legislation on the Fish- eries upon, J. M. K. Southwick on	39-45
Ocean Fishes, Decrease in Numbers	40
Oemler, A., on Oyster Industry of Georgia	263-272
Ohio, Restrictive Fishery Regulations of	18
Open pools for fish in Aquaria	150
Outline for Lake Study	71-72
Overfishing	309
Oyster-culture, deep-water	273-276
Oyster Fishery in 1880 and 1892	415
Oyster Fishery of Canada	347
Oyster Industry of Georgia, by A. Oemler	263-272
Oyster Output of United States	405
Oysters and other Mollusks of Japan	433
Oysters, Food of	59, 60
Pacific Coast, Fishes of	31-32
Pacific States, Products of Fisheries of	402
Page, W. F., on Propagation of Black Bass in Ponds	220-236
Parasites on Aquarium fish	154-158
Parasitic Protozoan on Fish in the Aquarium, re- port by C. W. Stiles	173-190
Paris Tribunal of Arbitration	365-367
Pearl Oyster, Cultivation of	457
Pearls, and the Utilization and Application of their Shells in the Ornamental Arts, as shown at the World's Columbian Exposition	439-457
Pearls used by prehistoric tribes of America	443
Peck, James I., on the Food of the Menhaden	118-126
Pelagic sealing	364, 365
Pennsylvania, Restrictive Fishery Regulations of	18
Pennsylvania, operations of State Hatcheries	22
Pieters, A. J.	130
Plague at Astrakhan	314
Plankton Studies in Great Lakes, J. E. Reighard on	127-142
Pollution of streams	23
Post, Hoyt, on Fish-Culture in Michigan	201-211
Pound-net Fishing in Chesapeake Bay	355
Pound-net Fishing in Lake Erie	349, 352
Pound Nets	31
"Professional" Putrefactive poisoning	317
Program of Congress on Fish and Fisheries	9-11
Propagating Ponds for Black Bass	292
Preliminary Address of General Committee on World's Fisheries Congress	3-6
Products of United States Fisheries	398-411
Provisional Program for Fisheries Congress	8-9
Publications of St. Andrew's Marine Laboratory	254-256
Puget Sound, Fisheries and Fishery Industries of, James G. Swan on	371-380
Putnam, Prof. F. W.	441, 443
Pumps and Electric Motors for Aquarium	159
Purse seine, effect of	289
Quelch, J. J., on Fish and Fishing in British Guiana	237-240
Rank and Value of Principal Fishery Products of United States	404
Rasch, Prof.	219
Raveneau, W. de C.	154
Reeves, I. S. K., on Water Supply and Pumping Plants of the Aquarium	159-161
Refrigeration applied to Bait Preservation	302
Refuse Fish Products, utilizing	292
Reighard, J. E.	197, 207, 209
Reighard, J. E., on Plankton Studies in the Great Lakes	127-142
Relation of Scientific Research to Economic Problems, George Brown Goode on	49-58

	Page.
Resolutions of International Fishery Conference.....	20
Restrictive Fishery Regulations of States bordering on Great Lakes	18
Rowe, H. C., on deep-water Oyster-culture.....	273-276
Rubber Comb Company of Rochester	147
Ryder, John A., on Biological Research in Relation to the Fisheries	59-63
Salmonoid Fishes, rearing young.....	221-228
Saline Soddening, or Meat "Koshering," by Jews.....	333
Salmon Fishery of Japan.....	429, 436
Salt, Uses and Effects in preserving Fish	328, 329
Salt-water Fishes, decrease of.....	26-31
Salt water for Aquarium use.....	146, 152
Salt-water Pipe, Pumps, etc., for Aquarium	161
Salt-water Reservoir for Aquarium.....	159
Sanitary Fish Market, requirements for	304
Sanitary fresh-food Markets	324, 325
Saprolegniaceæ, literature upon.....	171-172
Saprolegnia infesting Fish, Observations and Experi- ments on. By G. P. Clinton.....	163-172
Sardine Fishery of Japan.....	430, 431
Sardine Fishery of Puget Sound.....	378-380
Sardines, Smelt, and Herrings, methods of securing	376, 377
Schools for Fisherfolk	306-308
Scup, Increase of.....	40
Scup (Tai) Fishery of Japan	421, 422
Sea and Coast Fisheries, Daniel T. Church on.....	37-38
Seal, Fur, J. Stanley-Brown on.....	361-370
Sealing Regulations	367-369
Seal life, Facts of	364
Seaweed as Food	372, 373
Seaweed, Manufacture of	373
Seining, Memorial upon	41
Shad Fishery in 1880 and 1892.....	414, 415
Shad Fishery of United States	407
Shad introduced on Pacific Coast	191
Shell Carvings and Cameo Work	452-454
Shell Material, miscellaneous uses of	454
Shellwork and Mother-of-Pearl in Furniture and Jewelry	447-452
Shore Fishery Industries of United States.....	411
Smelt, Herrings, and Sardines, methods of securing	376, 377
Smith, Frank	130
Smith, Hugh M., compilation on Fisheries of Japan. 419-438	
Smith, Hugh M., on Statistics of the Fisheries of the United States	389-417
Smith, Hugh M., on the Maintenance and Improve- ment of American Fisheries	287-292
Snapping-turtle Culture in Japan	421
Sodium alginate, commercial application of	373
Sole and Flounder Fisheries of Japan	427, 428
South Atlantic States, Products of Fisheries of	400
Southwick, J. M. K., on Our Ocean Fishes and the Effect of Legislation upon the Fisheries	39-45
Spangler, A. M., on Decrease of Food Fishes in American Waters	21-35
Spawning of the Lobster	282
Spawning Period of Black Bass	280
Spawning Pond for Black Bass	282
Sporadic Diseases on Ships at Sea	315
Spring Herring Fisheries of Japan	435-438
Squeteague (Weakfish) Fishery of United States	408
Squeteague, or Weakfish, Decrease of	26
Squid Fishery of Japan	437
State Fish Commissions	65
Statistics of Fisheries of Japan	438
St. Andrew's Marine Laboratory, publications of	254-256
St. Andrew's Marine Laboratory, Scotland, Fish- cultural Investigations at	241-256
Stanley Brown, J., on Past and Future of the Fur Seal	361-370
State Commissions, letter of invitation to members of	7
State Control of inland Waters in United States	353
Statistics of Fisheries of United States	389-417
St. Petersburg, Cholera Epidemic at	314
Stiles, C. W., on a Parasitic Protozoan infesting the Fish in the Aquarium	173-190
Stranahan, J. J.....	148
Strikes, Poverty, Filth, and Disease	322
Striped Bass introduced on Pacific Coast	191
Sturgeon, recent Hatching Experiments on Dela- ware River	335-339
Spring Mackerel Fisheries of Ireland	357, 358
Swan, James G., on Fisheries and Fishery Indus- tries of Puget Sound	371-380
Tai (Scup) Fishery of Japan	421, 422
Technical Schools for Fisherfolk	306-308
Telegraphic and Carrier Pigeon Service for Sea Fish- eries	308
Temperature of Water in Aquaria	151
Tiffany Pavilion at Columbian Exposition	440
Torturing and Starving Fish	296-298
Treatment of Fish when first caught	295
Trepang (Sea-cucumber) Fishery of Japan	436
Trout-culture, Past, Present, and Future of	47-48
Tunny Fishery of Japan	424, 425
Unbled and Ungutted Fish in Markets	294
United States Fisheries compared with those of other Countries	412
Utilization of Waste Fish and Fish Products	305
Vessels, Apparatus, and Capital of United States Fisheries	394-398
Virginia Coast, Fisheries of	355, 356
Wall-eyed Pike, methods of Hatching	197-207
Walker, Bryant	135
Ward, H. B	130
Water Supply and Pumping Plants used for the Aquarium	150-161
Weakfish (Squeteague) Fishery of United States	408
Whale and Dolphin Fisheries of Japan	419-438
Whale fishery of United States	405
What we know of the Lobster, by Fred. Mather	281-286
Whitefish-Culture, History and Methods of, by Frank N. Clark	213-220
Whitefish Eggs distributed by U. S. Fish Commission, 1872-93	218
Whitefish Fry distributed by U. S. Fish Commission, .1876-1893	219
Weakfish, or Squeteague, Decrease of	26
Wilkins, J. T., on Fisheries of Virginia Coast	355, 350
Wilmot, Samuel	214, 215
Wisconsin, Restrictive Fishery Regulations of	18
Wolcott, Robert	130
Woodworth, W. McM	135
Wounds caused by handling Fish	816

J. Torrey

abuse